

that "in certain groups absolute or practical definition of the species by written characters or descriptions is beyond my powers." The greatest confusion seems to have arisen from the fact that many old species were established upon cultivated plants and others upon a perfect medley of forms, which being resolved leaves nothing behind upon which to establish a species and a name must be suppressed. For instance, *Aster Novi-Belgii*, L., disappears, being swallowed up completely by neighboring species; which is also the case with *A. miser*, L., and *A. Tradescanti*, L., although in this last case the old name claims a small share, the rest all disappearing under *A. paniculatus* Lam., and *A. vimineus*, Lam. The name *A. linifolius* subsides from the American Flora, and so it goes, until in the forthcoming work on *Compositæ* it will take us many a day to get the run of our *Asters*.

As for *Solidago*, which now numbers nearly 80 species in North America, Dr. Gray gives a general arrangement under the three sections VIRGAUREA (which is made to include the old *Chrysastrum*), EUTHAMIA, and CHRYSOMA. Under the first section the species are arranged in five groups, *Squarrosæ* (§ *Chrysastrum*, T. & G.), *Glomerulifloræ*, *Thyrsifloræ*, *Paniculataæ*, and *Corymbosæ*. But few of the changes can be noted. For example, *S. thyrsoides*, E. Meyer, becomes *S. macrophylla*, Pursh; the vars. *multiradiata* and *humilis* of *S. Virgaurea* are acknowledged as species; *S. virgata*, Mx., falls under *S. stricta*, Ait.; the *S. altissima* of the Manual is *S. rugosa*, Mill., *S. Muhlenbergii*, T. & G. comes under *S. arguta*, Ait.; and *S. gigantea* is but a variety of *S. serotina*.

In the same contribution are the descriptions of many new species, mainly from Arizona and adjacent districts. A new buckeye from Lower California is an interesting discovery and many well-known genera receive large additions. A synopsis of North American species of *Baccharis* (18 in number) is given. Three new genera are described, all *Compositæ*; *Plummera*, from Southern Arizona, related to *Actinella* and named in honor of Mrs. J. E. Lemmon; *Dugesia*, from Northern Mexico and dedicated to Prof. Alfred Duges, a Mexican Zoologist; and *Hecastocleis*, from Nevada, a member of the *Mutisiaceæ*, and whose generic name alludes to the separate enclosure of each flower in its involucre.

A footnote informs us that the unequal insertion of the stamens will no longer serve to distinguish *Collomia* from *Gilia* and that hence Nuttall's *Collomia* must be remanded to the already large genus *Gilia*.—J. M. C.

**Contributions to American Botany**, by Sereno Watson; Proc. Am. Acad., Vol. XVII.—The larger part of this contribution is devoted to a list of the *Polypetalæ* from S. W. Texas and N. Mexico, collected chiefly by Dr. E. Palmer in 1879-80. The list is

a long one and includes over 50 new species. A synopsis of N. Am. *Desmanthus* is given, which shows 10 species.

The rest of the contribution contains the descriptions of new species, chiefly from our Western Territories. *Astragalus* receives 5 new species; *Eriogonum* 4; *Arabis*, *Caulanthus*, *Silene*, *Atriplex*, each 3; and *Myosurus*, *Claytonia*, *Arenaria*, *Malvastrum* (one from Florida), *Lupinus*, *Dalea*, *Sedum*, *Cotyledon*, *Oenothera*, *Allium*, each 2. The distinguishing characters of our four species of *Physaria* are given. *Lupinus Plattensis* is the specific name given to *L. ornatus*, Dougl., var. *glabratus*, Watson.

A discovery of special interest to eastern botanists and all those who use our eastern manuals is that of *Pedicularis Furbishie* on wet banks of the St. John's River, at Van Buren, Arostook Co., Maine, and extending along the river for sixty miles. This species is allied to *P. Canadensis* and *P. bracteosa* and is dedicated to its discoverer, Miss Kate Furbish, who has worked so successfully among the plants of her native state.—J. M. C.

**Native Trees of the Lower Wabash in Illinois and Indiana**, by Robert Ridgway.—This is the substance of the title to a paper published in the Proceedings of the U. S. National Museum, and to the author we are much indebted for advance sheets. Mr. Ridgway has made a careful study of the trees of the Lower Wabash and White River Valleys, and with the help of Dr. J. Schneck, of Mt. Carmel, Ill., has made this a most interesting and valuable paper. If space permitted we would like to publish copious extracts from it, but in this notice will have to be content with a meager outline. The author aptly describes our Southern Indiana forests as distinguished from those of more eastern districts by the absence of coniferous trees and the great variety of species growing together. Our woods are most decidedly "mixed woods" and 40 to 50 species are given as growing indiscriminately upon areas of 50 to 75 acres.

In regard to size, many measurements were taken, showing a most liberal growth. At least 34 species of trees reach or exceed a height of 100 feet; no less than 11 reach a height of 150 feet; and the greatest height recorded was that of a *Liriodendron*, being 190 feet.

The paper contains a list of 92 species with very interesting notes, the longest being upon our Tulip tree, or "Poplar" (*Liriodendron tulipifera*), the most magnificent of our trees; the White Elm, or "Red Elm" (*Ulmus Americana*), with its spurs or buttresses at base and its parasite, the mistletoe; the Sycamore (*Platanus occidentalis*), the largest hardwood tree of North America, with greatest girth and most massive branches, in one case the measurement about the base being 42 feet, and reports of others much larger, even to 66 feet; the Bald Cypress (*Taxodium distichum*)